

CLAIMS:

1. Panel-shaped acoustic wave generator (1A; 1B; 101), comprising:
at least one plate (2, 3; 102, 103);
acoustic transducer means (4; 140) for causing said plate to vibrate;
feedback means (10) for generating a feedback signal and
5 comprising a motion sensor (9) having at least one sensor component (11, 12; 14; 111B, 112B) mechanically coupled to said plate (2, 3; 102, 103).
2. Wave generator according to claim 1, the at least one plate (2, 3; 102, 103) comprising a first plate (2; 102) and a second plate (3; 103) arranged substantially parallel at a
10 distance (D) from each other;
said motion sensor (9) comprising a first sensor component (11; 111B) mechanically coupled to the first plate (2; 102) and a second sensor component (12; 112B) mechanically coupled to the second plate (3; 103).
- 15 3. Wave generator according to claim 1, wherein said motion sensor (9) comprises a reference component (5) cooperating with said one sensor component (14), said reference component (5) preferably being a third plate arranged substantially parallel to said one plate (3) at a distance therefrom.
- 20 4. Wave generator according to claim 1, wherein said at least one sensor component (11, 12; 14; 111B, 112B) is integrated in the corresponding plate (2, 3; 102, 103).
- 25 5. Wave generator according to claim 2, wherein said feedback means (10) are adapted to generate a feedback signal (S_A) representing a relative motion of at least a portion of the first plate (2; 102) with respect to at least a portion of the second plate (3; 103).

6. Wave generator according to claim 3, wherein said feedback means (10) are adapted to generate a feedback signal (S_A) representing a relative motion of at least a portion of said plate (3) with respect to said reference component (5).
- 5 7. Wave generator according to claim 2, wherein said motion sensor (9) is a capacitive sensor.
8. Wave generator according to claim 2, wherein said first and second plates (102, 103) comprise a front plate (103) and a back plate (102), respectively, of a display
10 device (100) comprising an array of display cells (110), each display cell (110) comprising a first electrode (111) connected to said back plate and a second electrode (112) connected to said front plate with a dielectric medium (104) arranged between said two electrodes; and wherein said motion sensor (9) is an integrated sensor comprising at least a part of at least one display cell (110B) of the display device.
- 15 9. Wave generator according to claim 8, wherein said acoustic transducer means (140) are integrated transducer means comprising at least a part of at least one display cell (110A) of the display device.
- 20 10. Wave generator according to claim 9, wherein said integrated motion sensor (9) comprises a first group (119) of display cells (110B), and wherein said integrated transducer means (140) comprise a second group (141) of display cells (110A), said first and second groups (119, 141) differing from each other.
- 25 11. Wave generator according to claim 8, wherein the display device (100) comprises a plurality of spacers (105) between the said plates (102, 103); wherein the density of spacers (105) in a display area (151) corresponding with sensor cells (110B) is less than the density of spacers (105) in regions outside said display area (151).
- 30 12. Wave generator according to claim 8, wherein said display device (100) is a liquid crystal display device comprising a liquid crystal layer arranged between said two plates (102, 103).

13. Wave generator according to claim 1, being subdivided into a plurality of sections (150), each section (150) comprising an associated acoustic transducer means (140) and at least one associated feedback means (151), wherein a drive signal for an acoustic transducer means (140) of a section (150) is generated on the basis of the feedback signal
5 from the corresponding feedback means (151).

14. Electronic apparatus (200), comprising:
a wave generator according to claim 1;
an acoustic driver (AD) comprising:
10 - a signal input for receiving an input signal (S_{IN});
- a feedback input for receiving a feedback signal (S_P) from the feedback means (110B);
- a drive output coupled to an input of the acoustic transducer means (110A);
15 the acoustic driver (AD) being adapted to generate at its drive output a corrected drive signal (S_D) on the basis of the input signal (S_{IN}) and the feedback signal (S_P).

15. Method for generating sound using a panel-shaped acoustic wave generator (1A; 1B; 101) comprising two plates (2, 3; 102, 103) arranged substantially parallel at a
20 distance from each other;
the method comprising the step of generating a feedback signal (S_A) representing a relative motion of at least a portion of one of said plates with respect to at least a portion of the other of said plates.

25 16. Method according to claim 15, wherein said feedback signal (S_A) is generated using a capacitive motion sensor (9) having sensor components (11, 12; 111B, 112B) mechanically coupled to said plates (2, 3; 102, 103).